

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 12 OCT 2005

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Applicant's or agent's file reference PE18580PC00	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2003/001644	International filing date (day/month/year) 23.10.2003	Priority date (day/month/year) -
International Patent Classification (IPC) or national classification and IPC H04Q 7/30		
Applicant Telefonaktiebolaget LM Ericsson (publ) et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 12.05.2005	Date of completion of this report 27.09.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Roger Bou Faisal / MRo Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2003/001644

Box No. I Basis of the report

1. With regard to the language, this report is based on:

☒ the international application in the language in which it was filed☐ a translation of the international application into _____,
which is the language of a translation furnished for the purposes of:☐ international search (Rules 12.3(a) and 23.1(b))☐ publication of the international application (Rule 12.4(a))☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on
- (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*
- :

☐ the international application as originally filed/furnished☒ the description:pages 1-11 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:pages 12-13, partly 14 (claims 11-14) as originally filed/furnishedpages* 18-22 as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the drawings:pages 1-6 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

- 3.
- ☐
- The amendments have resulted in the cancellation of:

☐ the description, pages _____☐ the claims, Nos. _____☐ the drawings, sheets/figs _____☐ the sequence listing (*specify*): _____☐ any table(s) related to the sequence listing (*specify*): _____

- 4.
- ☐
- This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____☐ the claims, Nos. _____☐ the drawings, sheets/figs _____☐ the sequence listing (*specify*): _____☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2003/001644

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-29</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-29</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-29</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US 2002131372, A1

D2: WO 0209463, A1

D3: EP 1331765, A1

D4: EP 1379033, A1

D5: US 2003005091, A1

D6: US 2002167961, A1

The cited documents represent the general state of the art. The invention defined in amended claims 1-29 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed method and system of polling in a packet-based data communications system, wherein the polling of connected user equipment is performed according to a first type (T1) and a complementary second type (T2). Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in amended claims 1-29 is novel and is considered to involve an inventive step. The invention is industrially applicable.

AMENDED CLAIMS

[received by the International Bureau on 18 June 2004 (18.07.2004)
The original claim 15 to 21 were amended; the others remain unchanged.]

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15. A base station system (20) in a packet-based data communications system (10), said base station system being adapted to polling connected user equipment (30), wherein said base station system comprises

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- first means (44) adapted for polling according to a first type (T1), said first polling type (T1) allowing said user equipment (30) to choose whether or not to transmit a user data packet (UP) to the base station system (20) in response to reception of polling of the first type (T1) and

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- complementary second means (46) adapted for polling according to a second type (T2), said second polling type (T2) requiring the user equipment

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AMENDED SHEET (ARTICLE 19)

(30) to transmit a user data packet (UP) or a dummy data packet (DP) to the base station system (20) in response to reception of polling of the second type (T2).

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16. A base station system (20) according to claim 15, wherein said base station system (20) comprises third means (23) adapted for analyzing the current radio traffic situation in the communications system (10) and for determining which type of polling to transmit.

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17. A base station system (20) according to claim 15 or 16, wherein said base station system (20) is adapted to perform polling according to the first type (T1) on a first logical channel, and to perform polling according to the complementary second type (T2) on a second logical channel.

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18. A base station system (20) according to any of claims 15-17, wherein the base station system (20) is adapted to transmit polling information to said user equipment (30), said information enabling the user equipment (30) to identify the polling type of the received polling.

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19. A base station system (20) according to claim 18, wherein said polling information is based on a current radio traffic situation in the communication system (10).

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20. A base station system (20) according to any of claims 15-19, wherein the communications system (10) is selected from at least one of:

a General Packet Radio Service (GPRS) communication system,

an Enhanced GPRS (EGPRS) communication system,

a GPRS/Enhanced Data rates for GSM (Global System for Mobile

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communications) Evolution (EDGE) communications system,

a Wideband Code Division Multiple Access (W-CDMA) communications system,

a CDMA2000 communications system,

AMENDED SHEET (ARTICLE 19)

a Wireless Local Area Network (W-LAN) communications system.

21. A base station system node in a packet-based data communications system (10), said node being adapted to polling connected user equipment (30), wherein said node comprises

- first means (44) adapted for polling according to a first type (T1), said first polling type (T1) allowing said user equipment (30) to choose whether or not to transmit a user data packet (UP) to the base station system (20) in response to reception of polling of the first type (T1) and

- complementary second means (46) adapted for polling according to a second type (T2), said second polling type (T2) requiring the user equipment (30) to transmit a user data packet (UP) or a dummy data packet (DP) to the base station system (20) in response to reception of polling of the second type (T2).

22. A user equipment (30) in a packet-based data communications system (10), said user equipment (30) being adapted to receive polling from a base station system (20) in said communications system (10), wherein the user equipment (30) comprises:

first means (34) for receiving and responding to polling of a first type (T1), said first means being adapted for optional transmission of a user data packet (UP) to the base station system (20) in response to said polling, and

complementary second means (36) for receiving and responding to polling of a second type (T2), said second means being adapted to mandatory transmit the user data packet (UP) or a dummy data packet (DP) to the base station system (20) in response to the polling.

23. A user equipment according to claim 22, wherein said equipment (30) further comprises third means (31) for identifying the polling type.

24. A user equipment (30) according to claim 22, wherein said equipment (30) further comprises:

AMENDED SHEET (ARTICLE 19)

-a buffer unit (33) for storing user data packets (UP) awaiting transmission.

25. A user equipment (30) according to claim 24, wherein said first means (34) and said second means (36) are adapted to check if there are any user data packets (UP) in the buffer (33) in response to polling from the base station system (20).

26. A user equipment (30) according to any of claims 22-25, wherein said first means (34) are further adapted to receive polling according to said first type (T1) on a first logical channel, and said second means (36) are further adapted to receive polling according to said second type (T2) on a second logical channel.

27. A system for polling in a packet-based data communications system (10) adapted to polling said system comprising:

means (40) adapted for polling user equipment (30) in said communications system according to a first type (T1) and a complementary second type (T2),

first responding means (34) adapted for optionally transmitting a user data packet (UP) from said user equipment (30) to a base station system (20) in response to reception of polling according to said first type (T1), and

complementary second responding means (36) adapted for obligatory transmission of the user data packet (UP) or a dummy data packet (UP) to the base station system (20) in response to reception of polling according to said complementary second type (T2).

28. A system according to claim 27, wherein the system further comprises:

control means (23) adapted for analyzing the radio traffic situation in the packet-based data communication system, and for selecting which type of polling to perform.

29. A system according claim 26 or 27, wherein the communications system (10) is selected from at least one of:

a General Packet Radio Service (GPRS) communication system,
an Enhanced GPRS (EGPRS) communication system,
a GPRS/Enhanced Data rates for GSM (Global System for Mobile
communications) Evolution (EDGE) communications system,
a Wideband Code Division Multiple Access (W-CDMA) communications
system,
a CDMA2000 communications system,
a Wireless Local Area Network (W-LAN) communications system.
